IN THE CLAIMS:

1.   (Currently amended) A method for storing and processing physiological mechanical data in a medical recording device ~~having continuous mechanical data collection and mechanical data storage of such data in plural temporal tiers~~, comprising:

        sampling one or more physiological signals at a selected sampling rate;

        deriving physiological parameter values from the sampled signal <u>to obtain</u>
                <u>parameterized signal data at a rate lower than the selected</u>
                <u>sampling rate of the physiological signal</u>;

        storing the parameter values as they are determined in a temporary
                memory buffer for a predetermined storage interval~~, wherein said~~
                ~~temporary memory buffer comprises at least two different~~
                ~~programmable temporal resolution values~~;

        determining a statistical aspect of the stored parameter values in the
                temporary buffer upon expiration of the storage interval; and

        writing the statistical aspect <u>as it is determined for a plurality of the</u>
                <u>predetermined storage intervals</u> to a long-term memory buffer<u>, the</u>
                <u>long-term memory buffer storing the statistical aspects for a long-</u>
                <u>term storage interval, the long-term memory buffer thereby storing</u>
                <u>statistical aspects having a temporal resolution of the parameter</u>
                <u>values corresponding to the predetermined storage interval of the</u>
                <u>temporary memory buffer</u>.

2.   (Currently amended) A method according to claim 1, further comprising:
        <u>allocating the temporary memory buffer into at least two different</u>
<u>temporary memory buffers and</u> programming a unique <u>storage interval to each of</u>
<u>the two different temporary memory buffers.</u> ~~temporal resolution to one of the at~~
~~least two different programmable temporal resolution values~~.

3.　　(Currently amended)　A method according to claim 2, further comprising allocating the long-term memory buffer into at least two different long-term memory buffers each having a unique temporal resolution, wherein the unique temporal resolution of ~~one~~ each long-term memory buffer is determined by the predetermined storage interval of a respective one of the temporary memory buffers.

4.　　(Currently amended)　A method according to claim 23, wherein the at least two long-term memory buffers comprise digital memory buffers.

5.　　(Original)　A method according to claim 1, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

6.　　(Original)　A method according to claim 5, further comprising calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.

7.　　(Original)　A method according to claim 1, further comprising performing said method based upon at least one of: a manually triggered event, a periodic event, an aperiodic event, a time of day, an automatically triggered event.

8.　　(Original)　A method according to claim 7, wherein said manually triggered event comprises a manually-triggered telemetric method-initiation signal.

9.　　(Currently amended)　A method according to claim 23, wherein the unique temporal resolution comprises at least a one of: a coarse resolution having a relatively low temporal resolution, a medium resolution having a higher temporal

resolution than said course resolution, and a fine resolution having the highest temporal resolution compared to said coarse resolution and said medium resolution.

10. (Original) A method according to claim 1, wherein in the event that during performance of the step of writing the statistical aspect to a long-term memory buffer said memory buffer capacity is exceeded, then
over-writing a portion of the previously-recorded statistical aspect.

11. (Original) A method according to claim 10, wherein the portion comprises the least recent portion of previously-recorded statistical aspect.

12. (Currently amended) A method according to claim 9, wherein upon expiration of a predetermined storage interval or upon exceeding available memory storage of a given long-term storage buffer the following step is performed:
transferring a set of data comprising the statistical aspect or the stored parameter values from one of said fine resolution and said medium resolution to said coarse resolution and from said fine resolution to said medium resolution.

13. (Previously presented) A method according to claim 1, further comprising:
storing the parameter values based upon at least one of: a discrete classification of the stored parameters, the temporal resolution of the stored parameters, and the total duration of storage time for said stored parameters.

14. (Previously presented) A method according to claim 9, further comprising:
allocating available memory for the stored parameters based at least in part upon a respective temporal resolution assigned to each of the stored

parameters, wherein said respective temporal resolution comprise said coarse resolution, said medium resolution, said fine resolution.

15.   (Original) A method according to claim 14, wherein the allocating further comprises automatic partitioning of available memory based upon the number of stored parameters or the temporal resolution of the stored parameters.

16.   (Original) A method according to claim 1, wherein the temporary memory buffers comprise histogram memory units and wherein the histogram memory units are assigned a value or range of values of the stored parameters to store.

17.   (Original) A method according to claim 16, wherein the histogram memory units are assigned at least one of: a discrete percentile range, a median storage value, an upper percentile value, a lower percentile value, as stored contents of said memory units.

18.   (Original) A method according to claim 17, further comprising:
        transferring the stored contents of some of the histogram memory units to the long-term memory buffers.

19.   (Currently amended) An apparatus for storing and processing physiological ~~mechanical~~ data in a medical recording device ~~having continuous physiologic mechanical data collection and mechanical data storage of such data in plural temporal tiers~~, comprising:
        means for sampling one or more mechanical physiological signals at a
                selected sampling rate;
        means for deriving mechanical physiological parameter values from the
                sampled signal <u>to obtain parameterized signal data at a rate lower
                than the selected sampling rate of the physiological signal</u>;

means for storing the mechanical physiological parameter values as they
are determined in a temporary memory buffer for a predetermined
storage interval, ~~wherein said means for storing includes at least~~
~~two different programmable temporal resolution values~~;
means for determining a statistical aspect of the stored parameter values
upon expiration of the storage interval; and
means for writing the statistical aspect <u>as it is determined for each of a</u>
<u>plurality of the predetermined storage intervals</u> to a long-term
memory buffer<u>, the long-term memory buffer storing the statistical</u>
<u>aspects for a long-term storage interval, the long-term memory</u>
<u>buffer thereby storing statistical aspects having a temporal</u>
<u>resolution of the parameter values corresponding to the</u>
<u>predetermined storage interval of the temporary memory buffer</u>..

20.   (Currently amended) An apparatus according to claim 19, further
comprising:
means for <u>allocating the temporary memory buffer into at least two</u>
<u>different temporary memory buffers and</u> designating a unique <u>storage interval to</u>
<u>each of the two different temporary memory buffers</u> ~~temporal resolution to one of~~
~~the at least two at least two different programmable temporal resolution values~~.

21.   (Currently amended) An apparatus according to claim 20, <u>further</u>
<u>comprising means for allocating the long-term memory buffer into at least two</u>
<u>different long-term memory buffers each having a unique temporal resolution,</u>
wherein the temporal resolution of ~~one~~ <u>each</u> long-term memory buffer is
determined by the predetermined storage interval <u>of a respective one of the</u>
<u>temporary memory buffers</u>.

22.   (Currently amended) An apparatus according to claim 2021, wherein the at least two long-term memory buffers comprise digital memory buffers.

23.   (Original) An apparatus according to claim 19, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

24.   (Original) An apparatus according to claim 23, further comprising:
        means for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.

25.   (Currently amended) A computer readable medium for storing instructions for storing and processing physiological data in a medical recording device having continuous data collection and data storage of such data in multiple time-resolved tiers, comprising:
        instructions for sampling one or more physiological signals at a selected sampling rate;
        instructions for deriving physiological parameter values from the sampled signal to obtain parameterized signal data at a rate lower than the selected sampling rate of the physiological signal;
        instructions for storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval;
        instructions for determining a statistical aspect of the stored parameter values upon expiration of the storage interval; and
        instructions for writing the statistical aspect as it is determined for each of a plurality of the predetermined storage intervals to a long-term memory buffer, the long-term memory buffer storing the statistical

aspects for a long-term storage interval, the long-term memory buffer thereby storing the statistical aspects having a temporal resolution of the parameter values corresponding to the predetermined storage interval of the temporary memory buffer.

26.   (Currently amended) A medium according to claim 25, wherein the ~~long-term~~ temporary memory buffer comprises at least two ~~long-term~~ temporary memory buffers each having a unique predetermined storage interval, ~~and further comprising:~~

~~instructions for designating unique temporal resolution to one of the at least two long-term memory buffers~~.

27.   (Currently amended) A medium according to claim 26, wherein the long-term memory buffer comprises at least two long-term memory buffers each having a unique temporal resolution corresponding to one of ~~one long-term memory buffer is determined by~~ the unique predetermined storage intervals of an associated temporary memory buffer.

28.   (Currently amended) A medium according to claim ~~26~~27, wherein the at least two long-term memory buffers comprise digital memory buffers.

29.   (Original) A medium according to claim 25, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

30.   (Original) A medium according to claim 29, further comprising:

instructions for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.

Please ADD the following NEW claims:

31. (New) A method for storing and processing physiological data in an implantable medical recording device, comprising:

sampling at least one physiological signal at a selected signal sampling rate, wherein the at least one physiological signal comprises a cardiac signal;

defining cardiac cycle boundaries in response to the sampled cardiac signal;

computing a physiological parameter value from the at least one physiological signal samples over a cardiac cycle;

storing the parameter value as it is derived for each of a plurality of cardiac cycles in a first temporary memory buffer for a first predetermined storage interval;

determining a statistical aspect of the stored parameter values in the first temporary memory buffer upon expiration of the first predetermined storage interval;

storing the statistical aspect as it is determined for each of a plurality of the first predetermined storage intervals in a first long-term memory buffer for a predetermined first long-term storage interval, the long-term memory buffer thereby storing the statistical aspects having a temporal resolution of the parameter values corresponding to the predetermined storage interval of the temporary memory buffer;

storing the statistical aspect as it is determined for each of a plurality of first predetermined storage intervals in a second temporary memory buffer for a second predetermined storage interval;

determining a next statistical aspect of the statistical aspects stored in the

second temporary memory buffer upon expiration of the second

predetermined storage interval; and

writing the next statistical aspect as it is determined for a plurality of

second predetermined storage intervals to a second long-term

memory buffer for a predetermined second long-term storage

interval, the second long-term memory buffer thereby storing the

next statistical aspects having a second temporal resolution of the

physiological parameter values corresponding to the second

predetermined storage interval, the second temporal resolution

being coarser than the first temporal resolution.

32. (New) The method of claim 31 wherein the first and second temporary

memory buffers being configured as histograms.